

Position: Controls Engineer

Department: Manufacturing Engineering

Reporting To: Senior Manager, Cyberphysical Systems

Job Location:

LIFT ALMMII Headquarters

1400 Rosa Parks Blvd

Detroit, MI 48216

Scope of Work & Purpose:

We are seeking a hands-on Controls Engineer with direct experience in industrial control systems and automation. This role involves active engagement on the production floor, designing, programming, and optimizing control systems for key manufacturing processes from start to finish. The successful candidate will demonstrate strong practical knowledge of PLC programming, HMI development, and industrial control systems. Experience with SCADA systems and advanced manufacturing equipment integration is a plus. This position requires a deep understanding of control systems engineering principles, a proactive approach to solving automation challenges, and a strong commitment to safety in a high-hazard environment.

KEY RESPONSIBILITIES & DUTIES

Control Systems Design and Implementation:

- Design, program, and commission PLC-based control systems for manufacturing equipment and processes.
- Develop and maintain HMI/SCADA interfaces for operator interaction and process monitoring.
- Integrate sensors, actuators, and instrumentation into control systems to optimize process performance.
- Create and maintain electrical schematics, control narratives, and system documentation.
- Support the installation and startup of new equipment and control systems.

Maintenance and Troubleshooting:

- Lead troubleshooting efforts for control system issues to minimize downtime and maintain production schedules.
- Perform routine maintenance and updates on PLC programs, HMI screens, and control hardware.
- Track and manage control system modifications and version control.

Safety, Compliance, and Standards:

- Ensure all control systems comply with relevant safety standards (ISO 13849/OSHA etc.) and industry best practices.
- Implement safety interlocks, emergency stop systems, and machine guarding controls.
- Participate in regular safety inspections and audits to identify potential hazards and ensure adherence to safety regulations.
- Follow procedures for sorting, set in order, shine, standardize, and sustain to ensure a safe and organized work environment.

PREFERRED QUALIFICATIONS AND COMPETENCIES:**Education and Experience:**

- A B.S. degree in electrical engineering, controls or controls systems engineering, mechatronics, instrumentation, or a related engineering discipline is required, an M.S. degree is preferred. Candidates should bring a minimum of 5 years of progressive, hands-on experience designing, programming, commissioning, and supporting industrial control systems, ideally within a manufacturing or advanced-manufacturing environment, with a demonstrated record of leading projects from concept through start-up.

Technical Knowledge: Extensive PLC programming experience across major platforms — Allen-Bradley/Rockwell, Siemens, and Beckhoff, — is expected, including proficiency in Structured Text, Ladder Logic, and Function Block. The role requires strong HMI/SCADA development experience (e.g., FactoryTalk View, Wonderware, WinCC) and a solid command of industrial networking and communication protocols such as EtherNet/IP, PROFINET, Modbus, and EtherCAT. A working understanding of motor control, electrical systems, instrumentation, and electrical safety and regulatory standards (ISO 13849, OSHA, etc.) is essential, along with the ability to produce and maintain control narratives, I/O lists, schematics, and related documentation. Experience integrating control systems with MES and plant information systems required.

Safety and Compliance: A thorough understanding of electrical safety protocols and regulatory compliance related to industrial control systems is essential.

Leadership Skills: This position has no direct reports; however, candidates should demonstrate the ability to inspire and motivate team members, foster a culture of collaboration, and support continuous improvement initiatives.

Communication and Problem-Solving: Strong communication skills are vital for effectively coordinating with production teams, addressing technical challenges, and liaising with internal stakeholders and external partners. Candidates should also possess excellent problem-solving abilities to troubleshoot issues and implement effective solutions in a dynamic manufacturing environment.

Adaptability and Resilience: The advanced manufacturing industry can be subject to fluctuations in demand, technological advancements, and regulatory changes. A good candidate should be adaptable and resilient, capable of managing change and driving innovation to maintain competitiveness and sustainability.

About LIFT:

LIFT, operated by the American Lightweight Materials Manufacturing Innovation Institute (ALMMII), is a nonprofit, public-private partnership, national advanced manufacturing innovation institute. As the national advanced materials manufacturing innovation institute, LIFT is an accelerator convening and connecting government, industry and academia in the fields of advanced materials, manufacturing processes, systems engineering and talent development to enhance America's manufacturing competitiveness, national economy and national security.